In our study, D10 infusions appeared to be at least as effective as D50 bolus in preventing hypoglycemia in hyperkalemic patients receiving IV insulin” Yang et al (2019).

Abstract:

INTRODUCTION: Hypoglycemia is a common adverse effect when intravenous (IV) insulin is administered for hyperkalemia. A prolonged infusion of dextrose 10% (D10) may mitigate hypoglycemia compared to dextrose 50% (D50) bolus. Our objective was to evaluate whether D10 infusion is a safe and effective alternative to D50 bolus for hypoglycemia prevention in hyperkalemic patients receiving IV insulin.

METHODS: We conducted a retrospective review of patients ≥ 18 years who presented to the emergency department (ED) with hyperkalemia (K+ > 5.5) and received IV insulin and D10 infusion or D50 bolus within 3 h. The primary endpoint was incidence of hypoglycemia, defined as blood glucose (BG) ≤ 70 mg/dL, in the 24 h following IV insulin administration for hyperkalemia.

RESULTS: A total of 134 patients were included; 72 in the D50 group and 62 in the D10 group. There was no difference in incidence of hypoglycemia between the D50 and D10 groups (16 [22%] vs. 16 [26%], p = 0.77). Symptomatic hypoglycemia, severe hypoglycemia, and hyperglycemia rates in the D50 and D10 groups were [5 (7%) vs. 2 (3%), p = 0.45], [5 (7%) vs. 1 (2%), p = 0.22], and [34 (47%) vs. 23 (37%), p = 0.31] respectively. Low initial BG was a predictor for developing hypoglycemia.

CONCLUSIONS: In our study, D10 infusions appeared to be at least as effective as D50 bolus in preventing hypoglycemia in hyperkalemic patients receiving IV insulin. In context of ongoing D50 injection shortages, D10 infusions should be a therapeutic strategy in this patient population.

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